

### **REMARKS**

#### **I. Overview**

Claims 4 and 32-39, previously withdrawn, are now canceled without prejudice or disclaimer. Claims 59-70 are also canceled without prejudice or disclaimer. Claims 71-96 are newly added and, therefore, claims 71-96 are pending in the application. The present Amendment is filed concurrently with a Request for Continued Examination (RCE).

Applicant thanks the Examiner for granting a brief telephone interview, wherein it was agreed that claim 64, as previously presented, did not contain any new matter and, therefore, that the §112, first paragraph rejection would be withdrawn.

This Amendment is a response to the Official Action of 24 January 2008. A fee for a one-month extension of time is also concurrently submitted. No additional fee for any extensions of time are believed to be due. However, to the extent that a further request for extension of time is due, a Request for Extension of Time is respectfully requested for an appropriate amount of time, and the Commissioner is authorized to deduct any fees that may be due from **Deposit Account 50-1590**.

Entry of the claims is respectfully requested. Consideration and allowance of all claims are respectfully requested in view of the following remarks.

## **II. The Applicant's Device**

The claimed structure improves over conventional ozone-producing air purifiers by providing a structure for simple and reliable mechanical adjustment of the amount of ozone-producing radiation being released into an airflow, where such adjustment is effected by a rotation of one of two coaxial cylinders, such rotation causing adjustment of the overlapping of respective windows of the cylinders. By mechanically adjusting ozone-producing radiation passing through the overlap, such radiation enters an airstream in a controlled manner, whereby a level of subsequent air purification may be optimized.

It is important to note that an object of the invention is to provide a system that allows a user to effectively separate a process of generating UV radiation from a subsequent use of that UV radiation for producing ozone. (e.g., Applicant's ¶¶ 13<sup>1</sup>, 40). Ozone is only produced *after* the radiation exits the enclosure (emphasis added). In particular, a pair of cylinders may be formed as an enclosure around a UV lamp so that the lamp is completely enclosed except for any overlap of the first and second openings. Such a structure effectively traps the UV radiation within the enclosure, away from the ozone-creating passageway (airway) that receives a controlled amount of the UV radiation. Such structure essentially prevents airflow through the enclosure, thereby separating the UV radiation from the airflow, which greatly increases resolution of ozone adjustment. In a preferred embodiment, such overlap has a tapered shape, which further increases adjustment resolution.

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<sup>1</sup> In this response, paragraph references related to the instant application are given by reference to the published application no US 2005/0226762 A1

The claimed combination of structural limitations is ingenious and unique, and has enjoyed commercial success by solving a long-felt need in the air purification art for a structure that affords easy adjustment of ozone. Such commercial success may be verified by sales figures, if requested.

### **III. Discussion of Prior Art**

The outstanding claim rejections are rendered moot by the present claim amendments. The following discussion is offered to distinguish the present claims over the prior art.

**1) The applied primary (Saeki) and secondary (Bulsink) prior art references each teach away from the claimed combination of structural limitations.**

The **proposed modification cannot change the principle of operation of a reference** and attempting to adapt the Saeki structure to meet the claimed limitations “would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.” In re Ratti, 123 USPQ 349 (CCPA 1959), quoted in MPEP § 2143.02.

In particular, Saeki discloses apparatus (e.g., *Saeki* Figs. 2A and 2B, ¶¶ 21, 22) having light shielding film 42 that is stored in a storage container 40 by being rolled around a shaft 43. This Saeki structure consisting of “light-shielding film of the rolling-up type which shows around and it lets out to a circular ring-like guide,” cannot be adapted to include the claimed “first cylinder having a first cylinder sidewall, having a first window in the first cylinder sidewall, and being fixedly disposed” or “second cylinder having a second cylinder sidewall,

having a second window in the second cylinder sidewall, and being rotatably disposed,” or the claimed “first and second pipes.” In other words, a “film of the rolling-up type” cannot be adapted to include the claimed structure without destroying the ‘roll-up’ principle of operation of Saeki. Therefore, the Examiner’s proposed modification of Saeki is inappropriate because such would require that elements and specific arrangements of the Saeki structure be removed or changed in a way that would destroy the intended operation of the Saeki device.

Applicant also notes that the claimed “cylinder(s),” “tube(s),” etc. are intended to be of a type that “completely covers a lamp [] so that, when energized, ozone-producing radiation from lamp [] is trapped within enclosure [] and is not allowed to escape.” Applicant’s specification, at ¶0040. (c.f., Figure 3B of Saeki appears to show a significant gap between ring-like guide 47 and container 40).

The **proposed modification cannot render the prior art unsatisfactory for its intended purpose**, and the Bulsink reference teaches away from the claimed structure because the Bulsink device would be rendered unsatisfactory for its intended purpose of adding a volatile chemical (‘perfume’) to a volume of air. By comparison, the present invention (“ozone-producing air purifier”) has an object of removing such materials from a volume of air (e.g., Application, at ¶¶ 0010, 0014; Title). See *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984), cited in MPEP § 2143.01. In particular, Bulsink relates to devices popularly known as “air fresheners,” and this misleading euphemism / misnomer more accurately relates to ‘air polluters’ that dispense perfume into an automobile, room, etc. Applicant respectfully submits that an “air-freshener” is not related in any way to an “air purifier” because the addition of ‘perfume’ to a volume of air is unrelated to the removal of such materials.

The proposed modification of Bulsink would render Bulsink inoperable for its intended purpose. In In re Gordon, *supra*, the court found that simply ‘turning the prior art device upside down’ was not obvious because doing so would have rendered the prior art device inoperable for its intended purpose of filtering gasoline. Similarly, the Bulsink device would be rendered inoperable for its intended purpose of adding volatile chemicals (‘toxins’) to a volume of air if, as proposed by the Examiner, the Bulsink device were used with an ozone producing lamp. Therefore, the proposed modification of Bulsink is inappropriate, especially considering that an object of the present invention (e.g., Applicant’s specification, at ¶14) is providing a structure for the removal of volatile materials such as those being inserted by the Bulsink device. The ground of rejection appears to selectively view the references while ignoring the teaching away. This amounts to impermissible hindsight.

Applicant notes that Bulsink also teaches away the claimed structure that allows a user to effectively separate a structure (“enclosure”) for generating UV radiation from a structure (“ozone-creating passageway”) that subsequently uses that UV radiation for producing ozone. By comparison, Bulsink (e.g., col. 1: lines 35-39; col. 2: lines 4-6) has ventilating openings that move air flow directly along the wick. Specifically, Bulsink discloses a structure where volatile liquid readily evaporates when the wick is exposed, and an air flow facilitates the evaporation (e.g., col. 1: lines 29-30, 35), whereas the present invention effectively separates a process of generating UV radiation from a subsequent use of that UV radiation for producing ozone. Bulsink thereby teaches away.

**2) The applied tertiary (Friis-Hansen), quaternary (Nelson), and fifth (Barnes) and sixth (Paradoski) prior art references also teach away from the claimed combination of structural limitations.**

The Friis-Hansen structure attaches the center of knob 51 to a center shaft 50. By comparison, for example, the claimed invention (i.e., Applicant's claims 89-92), shown by example in Applicant's Figs. 5A-10, has a radially-offset shaft (e.g., extending portion 43, shown in, e.g., Fig. 8) that moves along an arc (e.g., arcuate opening 85 (e.g., Fig. 9) that is radially offset from a center axis, which allows installation/removal of a top cover without requiring a conventional center shaft, or any conventional attachment or additional guiding of such center shaft to the apparatus. A conventional center shaft having a knob, as in Friis-Hansen, is incompatible with what is claimed and, therefore, the Friis-Hansen reference teaches away from what is claimed.

Nelson discloses an end-cap 72 - a single cylinder that is fixed in place for maintaining orientation of an electrical connector. Such teaches away from the claimed structure that rotates a cylinder within another cylinder. A single fixed cylinder, as in Nelson, does not teach or suggest what is claimed. In addition, a single sliding sleeve of Nelson that covers specific lengthwise sections of tube 36 does not teach or suggest what is claimed, but is instead similar to the telescoping structure of McMillan, Jr. (previously applied). Further, the electrical connections 76 of Nelson also teach away from the claimed structure, because end-cap 72 includes electric power connections formed as pins 76, which are inserted into a power plug 78 when end-cap 72 is properly oriented (e.g., ¶¶ 70, 77, Figs. 4, 7), whereas the claimed structure (i.e., Applicant's claims 93-94) has an electrical connector structurally independent of the

claimed cylinders (see, e.g., Applicant's Fig.10). Still further, the single lamp of Nelson has an ozone-producing section and a germicidal section within the single lamp, and such is structurally distinguishable from independently mounting first and second lamps and corresponding first and second lamp holders, as claimed.

The fifth and sixth references fail to cure the above-noted deficiencies. Applicant notes that the use of a separate germicidal lamp, as in the fifth reference Barnes '610, is known. However, Barnes also teaches away from the present invention, which separates UV radiation from an ozone-creating passageway, by placing an ozone type UV source directly in the airstream 32.

The sixth reference, Paradoski, discloses a tubular container having a collar that is attached with a frangible connection to the container. As shown therein in Fig. 5 (see also col. 2: lines 58-62), the collar moves in a lengthwise sliding direction to expose opening 58. Such structure would be rendered unsatisfactory by the proposed modification, for its intended use of lengthwise sliding and, therefore, teaches away from the present invention.

**3) The claimed invention as a whole must be considered and prior art must also be considered as a whole, and such considerations render the claimed structure nonobvious.**

The invention must be considered "as a whole," and prior art must also "be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." MPEP §2141.03, citing W.L. Gore & Assoc. v. Garlock, 220 USPQ 303 (Fed. Cir.

1983), *cert. den.* 469 U.S. 851 (1984) (emphasis in MPEP). “The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; . . . [t]he references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. . . .” Hodosh v. Block Drug Co., Inc., 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). The teaching or suggestion to make the claimed combination . . . must . . . be found in the prior art, not in applicant’s disclosure. MPEP §2141.03, citing In re Vaeck, 20 USPQ2d 1438 (Fed. Cir. 1991). The invention must be considered “as a whole,” and prior art must also “be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” MPEP §2141.03, citing W.L. Gore & Assoc. v. Garlock, 220 USPQ 303 (Fed. Cir. 1983), *cert. den.* 469 U.S. 851 (1984) (emphasis in MPEP). “The issue [] is whether the teachings of the prior art would, *in and of themselves and without the benefit of appellant’s disclosure*, make the invention, as a whole, obvious.” In re Nomiya, at 612, quoting In re Spinnoble, 160 USPQ 237, 243 (CCPA 1969)(emphasis in original), additional citations omitted.

In our case, the prior art in the field of ozone-producing air purifiers perceived a need to cover a UV lamp with a physically-removable cover, whereby such physically-removable cover could be added or removed in attempting to optimize an ozone production. By comparison, the present invention eliminates a need to remove a cover. For example, U.S. 5,751,007 discloses removable tubular sleeves that attach to a UV lamp; *Saeki* (JP 09-169503) discloses wrapping a removable film around a UV lamp, and then storing the removed film in a container when not in use. The prior art in the field of ozone type air purifiers also perceived a structure that variably covers a lengthwise portion of a UV lamp, as discussed in previous responsive arguments. The present invention also eliminates the need for such cumbersome apparatus. Since the prior art, as



discussed above, teaches away, Applicant respectfully submits that the claimed ozone-producing air purifier, as a whole, would not have been obvious.

#### **4) Impermissible Hindsight - Picking & Choosing**

Respectfully, it appears that the Examiner has engaged in improper hindsight analysis and has selected parts of the respective individual references without consideration of the invention as a whole. *See In re Wesslau*, 147 USPQ 391, 393 (CCPA 1965) (“impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art”). There is nothing in any of the applied references, alone or in combination, that teaches or suggests what is claimed, and it is respectfully submitted that the Examiner’s statements are unsupported by any reasoning other than that gleaned from Applicant’s disclosure. In particular, since the *Bulsink* reference teaches away, the statement of alleged motivation (Office Action 01/24/2008, at p. 4) is inapposite.

Further, the statement of alleged motivation is impermissible hindsight because it is overbroad, ignores the teachings away of the applied references, and ignores the solutions to long-felt needs provided by the claimed structure. Specifically, the statement, “It was well known in the art at the time of invention to provide an adjustment member that encloses an object and controls the amount of a material that is being produced/released from the object by rotation of said adjustment member in an air treatment device” appears to pertain only to the applied secondary *Bulsink* reference, and such reference is unrelated to the art of photochemical air purification. As discussed above, *Bulsink* teaches away from the claimed invention and the

just-quoted statement (esp. “rotation of an adjustment member”) is, therefore, inappropriate because it disregards the claimed invention and respective references as a whole.

Still further, the references are not combinable. Saeki is only cited as having the claim limitation of an ozone lamp having a longitudinal axis. None of the other claim limitations are present, and Saeki only discloses wrapping a film around the longitudinal axis of a UV lamp, and such does not teach or suggest any other limitations of the claimed structure. The Bulsink reference does not teach or suggest anything regarding air purification, but instead discloses a device that adds toxins to the air. There is, therefore, no suggestion in the prior art to have combined and/or modified these references. Applicant also respectfully submits that the references are not combinable and, although non-combinability is not conclusive evidence of non-obviousness, it must be given weight when the primary and secondary references teach away from the Examiner’s proposed combination. See. e.g., MPEP §§ 2143.01, 2145(III, X).

#### **5) Non-linear taper**

The Examiner is requested to provide a reference that would have suggested the claimed combination that includes a non-linear taper (e.g., Applicant’s claim 80).

#### **IV. Conclusion**

For the stated reasons, Applicant believes the application should be passed to issue.

The Examiner is kindly requested to call the undersigned at the telephone number listed below with any questions or requests. In addition, Applicant can provide sales records evidencing "commercial success" of the subject invention. Such evidence will be provided if necessary. Applicant thanks the Examiner for her further examination of the application.

Respectfully submitted,



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